

In the claims:

Please amend claims 1, 25, and 43 as follows. The entire claim set as now pending is reproduced below, for the convenience of the Examiner.

1. (Amended) A system comprising:

a fluid dispensing pump including a feed screw driven by a motor having indexed rotational positions;

a position controller for controlling the position of the pump relative to a substrate, the position controller generating a time-duration-based pump control signal; and

a dispensing controller for controlling a dispensing operation of the pump, the dispensing controller receiving the time-duration-based pump control signal, and in response to the time-duration-based pump control signal generating an index signal for the motor for controlling rotation in the motor based on the indexed rotational positions.

25. (Amended) A method for controlling a fluid dispensing operation comprising:

controlling the position of a fluid dispensing pump relative to a substrate at a position controller, the fluid dispensing pump including a feed screw driven by a motor having indexed rotational positions, the position controller generating a time-duration-based pump control signal; and

controlling a dispensing operation of the pump at a dispensing controller that receives the time-duration-based pump control signal, and in response, generates an index signal for the motor for controlling rotation in the motor based on the indexed rotational positions.

43. (Amended) A dispensing controller for a fluid dispensing pump including a feed screw driven by a motor having indexed rotational positions, the dispensing controller for controlling a dispensing operation of a pump, the dispensing controller receiving a pump-control signal, and in response, generating an index signal for the motor for controlling rotation in the motor based on the indexed rotational positions, the pump control signal received from a position controller that controls the position of the pump relative to a substrate, the pump control signal comprising a time-duration-based signal.

Please add new claims 56-61 as follows.

56. (New) A system comprising:
- a fluid dispensing pump including a feed screw driven by a motor having indexed rotational positions, wherein the feed screw includes a helical cavity defined between a major diameter and a minor diameter of a thread of the feed screw, and wherein the fluid dispensing pump further includes a cartridge having a cavity in communication with the feed screw for introduction of dispensing fluids into the helical cavity;
- a position controller for controlling the position of the pump relative to a substrate, the position controller generating a time-duration-based pump control signal; and
- a dispensing controller for controlling a dispensing operation of the pump, the dispensing controller initiating the dispensing operation in response to the pump control signal by generating an index signal for the motor for initiating rotation in the motor based on the indexed rotational positions.

57. (New) The system of claim 56 wherein the cartridge comprises:
a body having a bore;
a fluid inlet at a proximal end of the bore;
a fluid outlet at a distal end of the bore; and
a feed screw for delivering fluid from the fluid inlet to the fluid outlet, the feed screw having a longitudinal axis, the fluid inlet being elongated in a direction along the longitudinal axis of the feed screw.
58. (New) The system of claim 56 wherein the motor comprises a closed-loop servo-motor.
59. (New) The system of claim 56 wherein initiation of the time-duration-based control signal indicates that the pump is in position for a dispensing operation.
60. (New) The system of claim 56 wherein the time-duration-based control signal comprises a rectangular waveform having a rising edge and a falling edge.
61. (New) The system of claim 56 wherein the dispensing controller, upon completion of the dispensing operation, generates a completion signal for indicating to the position controller that the dispensing operation is completed.